WHAT IS CLAIMED IS

1. An isolated nucleic acid comprising a member selected from the group consisting of:

(a) a polynucleotide having at least 75% sequence identity compared to the full-length of the sequence of SEQ ID NOS:1, 3, 5, 7, 9, 11, 13, 15, 17-20, 22, or 24; wherein the % sequence identity is determined by GAP 10 analysis using default parameters;

(b) a polynucleotide which encodes a polypeptide of SEQ ID NOS:2, 4, 6, 8, 10, 12, 14, 16, 21, 23, 25, or 29-37;

(c) a polynucleotide amplified from a plant nucleic acid library using the primers of SEQ ID NOS: 26 and 27, or primers determined by using Vector NTI Suite, InforMax Version 5;

(d) a polynucleotide comprising at least 20 contiguous bases of SEQ ID NOS:1, 3, 5, 7, 9, 11, 13, 15, 17-20, 22, or 24;

(e) a polynucleotide comprising at least 25 nucleotides in length which hybridizes, under high stringency conditions and a wash in 0.1X SSC at 60°C, to a polynucleotide having the sequence set forth in SEQ ID NOS:1, 3, 5, 7, 9, 11, 13, 15, 17-20, 22, or 24;

(f) a polynucleotide coding for a plant inositol polyphosphate kinase (IPPK) protein other than from *Arabidopsis*;

(g) a polynucleotide having the sequence set forth in SEQ ID NOS:1, 3, 5, 7, 9, 11, 13, 15, 17-20, 22, or 24; and

(h) a polynucleotide complementary to a polynucleotide of (a) through (g).

2. The isolated nucleic acid of claim 1, wherein the polynucleotide is from a monocot or dicot.

3. A vector comprising at least one nucleic acid of claim 1.

4. An expression cassette comprising at least one nucleic acid of claim 1 operably linked to a promoter, wherein the nucleic acid is in sense or antisense orientation.

5. The expression cassette of claim 4, wherein the nucleic acid is operably linked in antisense orientation to the promoter.

6. A non-human host cell containing at least one expression cassette of claim 4.

7. The host cell of claim 6 that is a plant cell.

8. A transgenic plant comprising at least one expression cassette of claim 4.

9. The transgenic plant of claim 8, wherein the plant is corn, soybean, sorghum, wheat, rice, alfalfa, safflower, sunflower, canola, cotton, or turf grass.

10. A seed from the transgenic plant of claim 8.

11. The seed from the transgenic plant of claim 9.

12. An isolated protein comprising a member selected from the group consisting of:

(a) a polypeptide comprising at least 25 contiguous amino acids of SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 21, 23, or 25;

(c) a polypeptide comprising at least 60% sequence identity compared to the full-length of SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 21, 23, or 25; wherein the percent sequence identity is based on the entire sequence and is determined by GAP 10 analysis using default parameters;

(d) a polypeptide encoded by a nucleic acid of claim 1;

(e) a polypeptide encoded by a nucleic acid of SEQ ID NOS:1, 3, 5, 7, 9, 11, 13, or 15;

(f) a polypeptide encoded by a nucleic acid of SEQ ID NOS: 20, 22, or 24; and

(g) a polypeptide having the sequence set forth in SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 21, 23, or 25.

13. An isolated ribonucleic acid sequence encoding a protein of claim 12.

14. A method for modulating inositol polyphosphate kinase (IPPK) activity or levels in a host cell, comprising:

(a) transforming a host cell with at least one expression cassette of claim 4; and

(b) growing the transformed host cell under conditions sufficient to modulate IPPK activity in the host cell.

15. The method of claim 14, wherein the host cell is a plant cell.

16. The method of claim 15, wherein the plant cell is from a monocot or a dicot.

17. A plant produced by the method of claim 14.

18. The transgenic plant of claim 17, wherein the plant is corn, soybean, sorghum, wheat, rice, alfalfa, safflower, sunflower, canola, cotton, or turf grass.

19. The method of claim 15 wherein the level of phytate is reduced.

20. The method of claim 15 wherein the level of non-phytate phosphorous is increased.

21. A method of decreasing the level of phosphorous in non-ruminant animal waste comprising providing said animal feed from a plant produced by the method of claim 14.

22. A method of improving the nutritional value of animal feed, comprising:
    (a) transforming a plant host cell with at least one expression cassette of claim 4; and
    (b) growing the transformed host cell under conditions sufficient to modulate IPPK activity in the host cell;
    (c) generating a plant with the transformed genotype; and
    (d) producing animal feed from the plant, wherein the animal feed has improved the nutritional value.

23. The method of claim 22, wherein the plant cell is from a monocot or a dicot.

24. A plant produced by the method of claim 22.

25. A seed from a plant of claim 24.

26. The transgenic plant of claim 24, wherein the plant is corn, soybean, sorghum, wheat, rice, safflower, sunflower, or canola.

27. The method of claim 22, wherein the level of phytate is reduced.

28. The method of claim 22, wherein the level of non-phytate phosphorous is increased.

29. A method of decreasing the level of phosphorous in non-ruminant animal waste comprising providing said animal feed from a plant produced by the method of claim 22.

30. An isolated protein containing a polypeptide sequence selected from the group consisting of SEQ ID NOS: 30-33.

31. An isolated protein containing the polypeptide sequence selected from the group consisting of SEQ ID NOS: 34-37.

32. A method of increasing the level of available phosphorous in animal feed, comprising:
    (a) transforming a plant host cell with at least one expression cassette of claim 4; and
    (b) growing the transformed host cell under conditions sufficient to modulate IPPK activity in the host cell;
    (c) generating a plant with the transformed genotype; and
    (d) producing animal feed from the plant, wherein the animal feed has an increased level of available phosphorous.

33. The method of claim 32, wherein the plant cell is from a monocot or a dicot.

34. A plant produced by the method of claim 32.

35. A seed from a plant of claim 34.

36. The transgenic plant of claim 34, wherein the plant is corn, soybean, sorghum, wheat, rice, safflower, sunflower, or canola.

37. The method of claim 32, wherein the level of phytate is reduced.

38. A method of decreasing the level of phosphorous in non-ruminant animal waste comprising providing said animal feed from a plant produced by the method of claim 32.

39. A method of altering plant phenotype comprising:
    (a) transforming a plant host cell with at least one IPPK polynucleotide of claim 1 and at least one polynucleotide of interest;

(b) growing the transformed host cell under conditions sufficient to modulate the activity of IPPK and the polynucleotide of interest in the host cell; and

(c) generating a plant with an altered phenotype.

40. The method of claim 39, wherein the activity of IPPK is downregulated while the activity of the polynucleotide of interest is up-regulated.

41. The method of claim 40, wherein the polynucleotide of interest is myo-inositol monophosphatase (IMP) or phytase.

42. The method of claim 39, wherein the activity of IPPK and the activity of the polynucleotide of interest are downregulated.

43. The method of claim 42, wherein the polynucleotide of interest is inositol 1,3,4-trisphosphate 5/6-kinase (ITPK) or myo-inositol 1-phosphate synthase (MI1PS).

44. A transgenic plant produced by the method of claim 39.

45. The transgenic plant of claim 44, wherein the plant is corn, soybean, sorghum, wheat, rice, alfalfa, safflower, sunflower, canola, cotton, or millet.

46. A seed from a plant of claim 44.